



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,823	03/15/2004	Sung-Po Yao	250123-1040	1398
24504	7590	04/17/2006	EXAMINER	
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 100 GALLERIA PARKWAY, NW STE 1750 ATLANTA, GA 30339-5948			RADOSEVICH, STEVEN D	
			ART UNIT	PAPER NUMBER
			2138	

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/800,823	YAO ET AL.	
	Examiner	Art Unit	
	Steven D. Radosevich	2138	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-11 are present for examination.

Priority

Acknowledgement is made that foreign priority is claimed for this application and as such the date of priority (03/17/2003) is being used for this examination.

Information Disclosure Statement

Acknowledgement is made that no Information Disclosure Statement (IDS) was provided with the application.

Drawings

The drawings filed with this application are accepted since examiner interprets no issues that require correction.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Standley (5396595).

1. As per claim 1, AAPA teaches a method for testing a device under test (DUT), the method comprising the steps of:

Outputting an expected test pattern corresponding to the DUT, the expected test pattern having a test input signal and an expected output signal (0003-0004 lines 15-21 and figure 1);

Saving the expected compressed pattern (0004 lines 20-21);

Acquiring the expected compressed pattern, and then outputting the test input signal to test the DUT (0004 lines 22-1 pages 2-3);

Receiving a real output signal output from the DUT, and then outputting the real output signal (0004 lines 1-2 on page 3);

Saving the real output signal (0004 line 3); and

Judging whether or not the real output signal and the expected output signal are the same (0004 lines 3-5).

AAPA does not specifically teach:

Compressing the expected test pattern and outputting an expected compressed pattern having an expected compressed output signal corresponding to the expected output signal:

Acquiring and decompressing the expected compressed pattern, and then outputting the test input signal to test the DUT;

Receiving and compressing a real output signal output from the DUT, and then outputting a real compressed output signal;

Saving the real compressed output signal; and

Judging whether or not the real compressed output signal and the expected compressed output signal are the same.

However in an analogous art Standley teaches the compression of data prior to storing it in a computer memory or transmission, transmission of the compressed data, and the decompression of the data (column 1 lines 21-30).

Therefore, one of ordinary skill in the art at the time the invention was made would have been motivated to combine AAPA's teaching of testing a DUT (as described above as per this claim) by adding the compressing, transmission, and decompression of data taught by Standley (as described above as per this claim) in order to as indicated by Standley, minimize memory requirements of storing data along with reducing data transmission time (column 1 lines 21-29).

2. As per claim 2, AAPA in combination with Standley teaches wherein the output expected test pattern is a scan test pattern (0002 lines 7-10 of AAPA).

3. As per claim 3, AAPA in combination with Standley teaches wherein the method is applied to a test system comprising:

An automatic test pattern generator (ATPG) for generating and outputting the expected test pattern (0003 lines 3 and 0005 lines 10-11 of AAPA).

4. As per claim 4, AAPA in combination with Standley teaches wherein the test system further comprises:

A compressor for receiving and compressing the expected test pattern, and then outputting the expected compressed pattern (102 – figure 1 and column 1 lines 20-22 of Standley).

5. As per claim 5, AAPA in combination with Standley teaches wherein the test system further comprises:

An automatic test equipment (ATE) including a memory for saving the expected compressed pattern and the real compressed output signal, the ATE judging whether or not the real compressed output signal and the expected compressed output signal are the same (0004 lines 20-21 and 3-5 of AAPA).

6. As per claim 6, AAPA in combination with Standley teaches wherein the test system further comprises:

A loadboard on which the DUT is placed, the loadboard having a compressing/decompressing unit for acquiring and decompressing the expected compressed pattern, outputting the test input signal to test the DUT, compressing the real output signal, which is output after the DUT is tested, into the real compressed output signal, and saving the real compressed output signal into the memory (0004 lines 21-3 of AAPA and column 1 lines 20-30 of Standley).

7. As per claim 7, AAPA in combination with Standley teaches wherein:

When the real compressed output signal and the expected compressed output signal are the same, it is judged that the DUT is passed (0004 lines 5-6 of AAPA); and

When the real compressed output signal and the expected compressed output signal are different, it is judged that the device under test is failed (0004 lines 6-7 of AAPA).

8. As per claim 8. AAPA teaches a test system for testing a device under test (DUT), the system comprising:

An automatic test pattern generator for generating and outputting an expected test pattern corresponding to the DUT, the expected test pattern having a test input signal and an expected output signal (0003 lines 13, 16-17 and 0005 lines 10-11);

An automatic test equipment for saving the expected pattern and a real output signal, and comparing the real output signal to the expected output signal (0003 line 14 and 0004 lines 20-21 and 3-5); and
AAPA does not specifically teach:

A compressor for receiving and compressing the expected test pattern, and then outputting an expected compressed pattern having an expected compressed output signal corresponding to the expected output signal;

An automatic test equipment for saving the expected compressed pattern and a real compressed output signal, and comparing the real compressed output signal to the expected compressed output signal; and

A compressing/decompressing unit for acquiring and decompressing the expected compressed pattern of the automatic equipment, testing the DUT using

the test input signal, outputting a real output signal, and compressing the real output signal into the real compressed output signal.

However in an analogous art Standley teaches the compression of data prior to storing it in a computer memory or transmission, transmission of the compressed data, and the decompression of the data (column 1 lines 21-30).

Therefore, one of ordinary skill in the art at the time the invention was made would have been motivated to combine AAPA's teaching of testing a DUT (as described above as per this claim) by adding the compressing, transmission, and decompression of data taught by Standley (as described above as per this claim) in order to as indicated by Standley, minimize memory requirements of storing data along with reducing data transmission time (column 1 lines 21-29).

9. As per claim 9, AAPA in combination with Standley teaches wherein the automatic test equipment comprises:

A memory for saving the expected compressed pattern and the real compressed output signal (0004 lines 20-22 and 3 of AAPA).

10. As per claim 10, AAPA in combination with Standley teaches the test system further comprising:

A loadboard on which the DUT is placed, the loadboard having the compressing/decompressing unit (0004 lines 22 of AAPA and column 1 lines 20-30 of Standley).

11. As per claim 11, AAPA in combination with Standley the test system wherein the expected test pattern generated by the automatic test pattern generator is a scan test pattern (0002 lines 7-10 of AAPA).


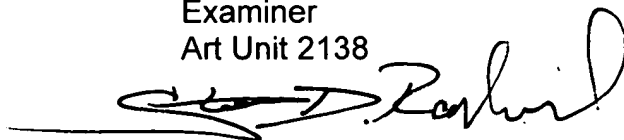
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Radosevich whose telephone number is 571-272-2745. The examiner can normally be reached on 9am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 571-272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Radosevich
Examiner
Art Unit 2138



GUY LAMARRE
PRIMARY EXAMINER